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The Effect of the Promoting Alternative Thinking Strategies Curriculum on Internalizing
Symptoms in both a Maltreated and Non-Maltreated Sample

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ROCHESTER INSTITUTE OF TECHNOLOGY

By

Elizabeth Raynor

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Symptoms in both a Maltreated and Non-Maltreated Sample

Elizabeth Raynor

Rochester Institute of Technology

Abstract

The present study examines whether the Promoting Alternative THinking Strategies (PATHS) curriculum has an ameliorating effect on internalizing symptoms among 68 low-income and maltreated participants between the ages of 7 and 11. Participants attended a six-week after school program, which implemented the PATHS curriculum. Pre and post measures were obtained and a repeated measures design was used to analyze all participants across three measures of anxiety, depression, and self-esteem. Results indicated that participants did not report clinical significant levels of anxiety, but that those children whose parents had 11 years or more of education reported significantly lower levels of anxiety after participating in the PATHS curriculum. This is in contrast to those children whose parents did not obtain 11 years of education, who did not report lowered levels of anxiety after participating in the PATHS curriculum. Participants' reports did show clinically significant levels of depression both before and after completing the PATHS curriculum, and demonstrated statistically significantly higher levels of self-reported depression after completing the PATHS curriculum. Girls tended to report a higher level of depression, but no interaction was found between genders. Participants reported a clinically significant level of Negative Self-Esteem as well, and did not show improvement after completing the PATHS curriculum.

CHAPTER ONE

Introduction

There is a clear link between child maltreatment and various forms of psychological maladjustment. Those who experience child maltreatment are vulnerable to a variety of deleterious effects including both internalizing and externalizing symptoms. However, internalizing symptoms present some unique challenges because they are problems that occur within the self that are more difficult to observe (Brown, Cohen, Johnson & Smailes, 1999; Toth, Cicchetti & Kim, 2002). Internalizing problems include symptoms of depression and anxiety, and a general lowered self-esteem. Many children who exhibit internalizing symptoms do not receive treatment, and those who do tend to receive treatment that is not evidence-based (Berwick, 2003). There are a number of treatments shown to be effective for those who experience internalizing symptoms and have endured child maltreatment, but many are costly and not easy to access (Berwick, 2003). This study aims to examine the effectiveness of a preventative treatment program that can be offered in an inexpensive and accessible way, while still using many aspects of effective treatments that tend to be more time consuming and costly.

The Promoting Alternative Thinking Strategies (PATHS) program is an evidence-based program which uses the Affective-Behavioral-Cognitive-Dynamic (ABCD) model of development and aims to provide children with the skills set and knowledge to effectively practice self-control, empathy, express emotions in an appropriate and healthy way, and problem-solve. Many of these components mirror aspects of the individual psychotherapeutic treatments that have been determined to be the most effective in treating children who have experienced

maltreatment (Greenberg, Domitrovich & Bumbarger 2000). PATHS is intended to be implemented in a general education setting, and therefore reaches a large number of students at a lower cost than individualized psychotherapy. Therefore, using PATHS with children who have been maltreated may serve as an inexpensive and efficient way to help mediate negative outcomes in maltreated children who would otherwise go without treatment.

However, no research has been conducted to support the effectiveness of the PATHS curriculum with children who have been maltreated. While many components of the PATHS curriculum have been useful tools in the treatment of maltreated children, it is unclear whether it is beneficial in ameliorating internalizing symptoms. In order to establish effective and efficient courses of treatment for this often vulnerable and overlooked population, it is crucial to collect relevant data on the PATHS curriculum's effect on maltreated children's internalizing symptoms.

To examine the effectiveness of the PATHS curriculum in decreasing internalizing symptoms on a sample of both maltreated and non-maltreated children from a low-income, urban population, pre and post measures were obtained. Participants were administered the Children's Depression Inventory (CDI), the Self-Perception Profile for Children (SPPC) and the Revised Children's Manifest Anxiety Scale (RCMAS) during weeks one and six in order to measure depression, self-esteem, and anxiety, respectively. It was hypothesized that participants' scores on these three measures would indicate a decreased amount of depression, anxiety, and a decrease in low self-esteem after participating in the six-week PATHS curriculum. It was further hypothesized that those who had been maltreated would have higher initial levels of internalizing symptoms, and results would therefore yield a greater impact on their symptoms.

Definition of Terms

Child Maltreatment is difficult to define due to a lack of social consensus about its scope and parameters (Cicchetti & Manly, 2001). For the purposes of this research, however, child maltreatment will be defined as physical abuse, emotional abuse, sexual abuse, and neglect experienced by a child.

Internalizing can be defined as those symptoms that occur within a person, and are not observable. This research examines the following internalizing symptoms in specificity: anxiety, depression, and low self-esteem.

Anxiety can be thought of as excessive worry or concern that is quantified, for the purposes of this research into several categories including: physiological anxiety, worry/oversensitivity, social concerns/concentration (RCMAS; Reynolds & Richmond, 2002).

Depression is a significantly generally lowered mood which is, for the purpose of this research, captured by a number of symptoms including a negative mood, interpersonal difficulties, a negative self-perception, a feeling of ineffectiveness, and a general loss of pleasure in daily activities (CDI; Kovacs, 1992).

Self-Esteem can be conceptualized as an overall global perception of one's sense of worth or esteem as a person (SPPC; Harter, 1985).

CHAPTER TWO

Literature Review

Effect of PATHS on Internalizing Symptoms

Research delineating the deleterious effects of child maltreatment shows a clear link between abuse, neglect, and various psychological impairments as well as a marked decrease in academic achievement and social acceptance by peers (Cicchetti, Lynch, Shonk & Manly, 1992; Cohen, Brown, & Smailes, 2001; Cohen, Mannarino, Murray, & Igelman, 2006; Eckenrode, Leiter, 2007; Nelson et al., 2002; Schultz, Tharp-Taylor, Haviland, & Jaycox, 2009). Although the definition of child maltreatment is a general term often used to encompass various types of abuse such as emotional abuse, physical abuse, sexual abuse, and neglect, the recent body of literature on the topic points to a clear association between child maltreatment and negative outcomes (Schultz et al., 2009). It is therefore critical to directly address the difficulties to which children who have been maltreated are especially vulnerable.

One negative outcome resulting from child maltreatment is a decrease in academic performance (Slade & Wissow, 2007). Eckenrode et al. (1993) found that maltreated children earn significantly lower scores on standardized tests, earn lower grades, repeat grade levels more often, and have higher rates of disciplinary action taken upon them than their peers who have not experienced maltreatment. Shonk and Cicchetti (2001) more closely examined school performance among maltreated children and found that teachers rated them as having a lack of persistence, a tendency to avoid challenging material, and an over-reliance on teacher guidance and monitoring.

Maltreated children also consistently show an increase in externalizing symptoms such as behavior problems including impulsivity, risk-taking behavior, substance abuse, and delinquency (Cohen, Brown & Smailes, 2001; Cohen et al., 2006; Leiter, 2007; Nelson et al., 2002; Schultz et al., 2009; Toth, Cicchetti & Kim, 2002). Children who have been subject to maltreatment experience a disproportionately high incidence of internalizing symptoms such as anxiety, depression, and low self-esteem (Bolger & Patterson, 2001; Cohen et al., 2001; Cohen et al., 2006; Hankin 2005; Kim & Cicchetti, 2006; Leiter, 2007; Schultz et al., 2009; Nelson et al., 2002; Shonk & Cicchetti, 2001; Toth, Cicchetti, & Kim, 2002; Toth, Cicchetti, Macfie, Maughan & Vanmeenan, 2000). Based on the number and severity of risk factors associated with child maltreatment, it is clear that there is a need for preventative and remediating measures.

Perhaps the most under-identified set of symptoms among children in general are internalizing symptoms; this is believed to be the case because internalizing symptoms are problems that occur within the self and therefore do not typically interfere with others (Achenbach, 1991). Those who exhibit more overt behavioral symptoms are more likely to receive attention, and subsequently, treatment. Therefore, it is likely that a disproportionately large number of maltreated children experience internalizing symptoms that do not get identified. A number of research studies have identified specific internalizing symptoms that occur in maltreated children. Three types of symptoms that are of particular concern are low self-esteem, depressive symptoms, and anxiety symptoms.

Maltreated children experience a disproportionately high rate of depression when compared with their non-maltreated peers (Brown, Cohen, Johnson & Smailes, 1999; Toth, Cicchetti & Kim, 2002). A study by Hankin (2005) explored depression and its mediators in

relation to a history of abuse during childhood. These results were obtained by administering a detailed self-report questionnaire to 652 undergraduate psychology students assessing their experiences with child abuse. They were asked to complete measures including a battery of questionnaires assessing depression, attachment style, anxiety, and cognitive style at two separate time points. He found that children who are maltreated tend to exhibit an insecure attachment style and a negative cognitive style which he found to be predictors of depressive symptoms in young adulthood. Given the large number of negative outcomes associated with depression, and the higher likelihood of childhood depression in maltreated children, it is clear that interventions addressing the issue are necessary.

Kim and Cicchetti (2009) found that a low self-image was a direct correlate with depression in a sample of 109 non-maltreated and 142 maltreated children attending a summer day camp. The study examined both groups' mean levels of self-esteem and depression through the Self-Esteem Inventory (SEI) and the Children's Depression Inventory (CDI), which are both self-report measures. Kim and Cicchetti's findings also indicate that low self-esteem is more prevalent in a maltreated child population; this highlights the importance of recognizing the possible implications of a low self-esteem.

Self-esteem, as it will be referred to in this study, can be conceptualized as a person's global feelings of self-worth. More specifically, it is defined as the sum of evaluations across various significant aspects of one's personality or self (Kim & Cicchetti, 2009). It is an important construct and, when determined as lowered, is often related to poor peer-relationships, depression, suicidality, loneliness, and decreased academic achievement and life satisfaction (Kernis, 2005). A longitudinal study that followed participants from birth to age 25 revealed that

lower self-esteem during adolescence has long-term negative effects that endure into adulthood; these negative outcomes include a greater risk of mental health problems, substance dependence, and lower levels of general life satisfaction at ages 18, 21, and 25 (Boden, Fergusson & Horwood, 2008). These findings that point to such deleterious effects of low-self-esteem on children, both immediate and long-lasting, emphasize the importance of addressing low self-esteem early on.

A study conducted by Caldwell, Rudolph, Troop-Gordon & Kim (2004) revealed that negative self-views have a significant effect on children's peer relationships; this study found that children with a negative self-concept tend to disengage from social interaction, resulting in an increase in stress among their relationships. Another possible explanation for peer rejection among children with low self-esteem is that those who have a negative self-image are more likely to exhibit aggression and externalizing problems (Donnellan, Trzesniewski, Robins, Moffitt & Caspi, 2005). A research study by Ladd and Burgess (1999) showed a link between aggressive behavior and poor relationships with both peers and teachers; additionally, the study found that aggressive children showed a higher rate of loneliness, friendlessness, and a higher likelihood to be disliked. Some explanations, then, between lowered self-esteem and peer rejection could be disengagement and/or aggression.

Not surprisingly, then, research suggests that children who are maltreated have difficulty being accepted by and forming relationships with their peers (Cicchetti et al., 1992). Research conducted by Bolger, Patterson and Kupersmidt (1998) found that maltreated children show low levels of acceptance among their peers; they found that those who are most chronically maltreated experienced the highest level of peer rejection. However, their findings also suggested

that those maltreated children who experienced peer-rejection benefitted most from increased self-esteem, especially when the children were able to develop a reciprocal, high-quality relationship.

Bolger and Patterson (1998) found that maltreated children benefit from having a close quality relationship, which resulted in an increase in self-esteem over time. They hypothesized that because parents of maltreated children often do not model functional friendships, it is likely that maltreated children do not always have the same opportunity to learn how to initiate and maintain an appropriate relationship. Bolger and Patterson explained that internalizing symptoms affect maltreated children's ability to form social relationships with peers. However, those children who are able to do so demonstrated an amelioration of internalizing symptoms such as low self-esteem. This emphasizes the importance of using social skill building as a way to moderate the negative effects of maltreatment.

In addition to low self-esteem and depression, anxiety is an internalizing symptom that has an effect on many aspect of a child's life. Research suggests that adolescents with anxiety disorders are at a higher risk for developing anxiety, depression, substance abuse problems, and academic underachievement during early adulthood (Woodward & Fergusson, 2001). Children who exhibit significant levels of anxiety also tend to interpret ambiguous information in a negative way; this is a cognitive style that leads to a negative attribution bias causing difficulties dealing with otherwise benign situations (Hadwin, Frost, French & Richards, 1997). Chorpita and Barlow (1998) researched the early development of anxiety, and found that those who feel as though events are not within their control are more prone to feelings of anxiety. This translates to

the maltreated child population to whom adverse events often occur which are out of their control.

Therefore, it is not surprising that maltreated children experience a higher incidence of anxiety than those who are not maltreated (Bolger & Patterson, 2001; Maikovich et al., 2008). In a review of recent literature, Grant et al. (2004) found that life stressors are a significant predictor of symptoms related to anxiety. Given the negative outcomes associated with anxiety in children, along with its frequent co-occurrence with both a lowered self-esteem and depression, the need for treatment of anxiety in maltreated children is clear.

Taking into account the gravity of the consequences related to child maltreatment, it is especially important that effective, and therefore, evidence-based interventions are implemented. The importance has been recognized as being increasingly important in recent years. The idea of evidence-based practices was born from the consensus that too many treatments are based on tradition and common-sense beliefs of effectiveness that have not been empirically proven. To be a true evidence-based practice, treatments must be demonstrated to be safe and effective. This must be proven through randomized, controlled trials. A number of research studies have outlined effective treatments and the characteristics that are correlated with a higher likelihood for success among maltreated children (Chaffin & Friedrich, 2004).

Recent research is increasingly showing a link between social competence and academic success. With caring interpersonal relationships and a positive classroom climate, students are more likely to be focused, attentive, motivated, and engaged which, in turn, increases academic performance (Zins, Bloodworth, Weissberg, & Walberg, 2004; McClelland, Morrison, &

Holmes, 2000). Prosocial behavior in students, as defined by cooperativeness, helpfulness, empathy, and sharing, has proven to be a significant predictor of both social and academic success (Caprara, Barbaranelli, Pastorelli, Bandura & Zimbardo, 2000). Emotion regulation in students has also been shown to predict academic success (Graziano, Reavis, Keane, & Calkins, 2007). In a study surveying teachers' opinions about behavioral traits necessary in students, Lane, Givner and Pierson (2004) found that both general and special education teachers feel that self-control and cooperation are two of the most essential characteristics in a successful student. A study conducted by Elias and Haynes (2008) revealed higher academic performance among those students who possessed higher social competence in a high-risk, urban, low SES community.

Likewise, a number of negative outcomes are associated with poor social skills such as social rejection, internalizing and externalizing problems, as well as lower academic achievement (Cook, Gresham, Kern, Barreras, Thornton & Crews, 2008). Emotional and behavioral difficulties frequently co-occur with academic difficulties, further highlighting the need for intervention as a way to increase academic performance (Dodge & Pettit, 2003). Schools have become progressively more receptive to implementing school-wide programs that aim to increase social competence.

Current research supports the idea that those who have experienced maltreatment suffer from mental health challenges; the number of maltreated children who actually receive treatment, however, remains low. Most maltreated children and violence-exposed children receive no treatment for their trauma symptoms, and those who do typically go to community therapists who do not usually provide evidence-based treatment (Berwick, 2003). When

considering the large number of children who are maltreated and the severity of their symptoms, it is clear that there is a need for an effective intervention that can be implemented by community health care workers. Recent research has suggested that certain treatments are effective, and has identified a number of factors contributing to resilience in children.

Research and theory on resilience has identified two sets of leading protective factors that help to support success in the face of adversity: social resources and personal resources. Social resources refer to close, quality relationships in the schools and with supportive adults both in effective school settings and within the community (Luthar, Cicchetti & Becker, 2000). Personal resources, on the other hand, refer to more internal sources of support; these include a basic sense of values, competence, self-esteem, and priorities. Both serve as buffers which may contribute to the success of maltreated children who, by definition, experience aversive circumstances predisposing them to more negative outcomes in general. Accentuating either, or both, of these protective factors could help lead to an increased likelihood of success despite hardships that maltreated children are more likely to endure. Therefore, providing an environment and skills set that would foster the growth of quality relationships may be an integral step in promoting resilience in at-risk youth. In addition, providing support for maltreated children to develop self-esteem and a sense of motivation toward school and various aspects of their lives would also appear to serve as a crucial step in advancing the success of children who are at-risk for negative outcomes. Some effective treatment strategies have been identified for maltreated children, and cultivating these social and personal resources are often key elements.

Effective treatment strategies for children who have been maltreated or exposed to traumatic events have typically involved Cognitive-Behavioral Therapy (CBT) of different variations (David-Ferdon & Kaslow, 2008; Kolko, 1996; Paz, Jones & Byrne, 2005; Silverman et al., 2008). CBT can use a wide variety of techniques to address a number of issues. Some underlying assumptions of the therapy are that behavior is learned and can therefore be “unlearned.” Another assumption made when using CBT is that our thoughts mediate our behavior. Therefore, the way that we cognitively frame events determines our emotional reaction; patterns of maladaptive cognitions, then, are a precursor and essentially the cause of psychological disorders (Verduyn & Calam, 1999). A meta-analysis of the effectiveness of evidence-based treatments on minority populations conducted by Huey and Polo (2008) indicates that CBT is the most effective treatment among various minority populations as well.

A number of studies have discussed the effectiveness of individual CBT with children who have been maltreated (Caffo, Forressi, and Lievers, 2005; Lawson, 2009; Verduyn & Calam, 1999). When using CBT with a maltreated child, a therapist seeks to establish a collaborative, working therapeutic alliance with the client who then works on increasing skills and competencies as well as challenging distortions. This is done through direct psychoeducation and role playing, as well as through homework. Progress is monitored between the therapist and client throughout the treatment. Some studies involving maltreated children participating in CBT involve family members, which has proven to increase the effectiveness of the intervention (Lawson, 2009).

Deblinger et al. (2006) conducted a study assessing the effectiveness of a particular type of CBT, targeted toward children who have been sexually abused. Trauma-Focused Cognitive

Behavioral Therapy (TF-CBT) is a variation of CBT, which targets trauma-related symptoms, Post Traumatic Stress Disorder (PTSD), anxiety, depression, and trauma-related cognitions including shame and self-blame. The therapy is a hybrid treatment integrating cognitive-behavioral, family-based therapy, and focuses on trauma symptoms. More specific treatment components include parenting skills, psychoeducation for both parents and children, relaxation skills, affective modulation, cognitive processing, trauma narration, in-vivo desensitization, and conjoint parent-child sessions focused on future development. Some strategies used are teaching children and their parents about the prevalence of abuse and offering information that helps victims feel validated by teaching them about others' similar reactions which then normalizes their feelings. They also practice some relaxation techniques including deep breathing and learning to become aware of their bodies' physiological reaction to stress. Parenting components were included which helped parents to become more supportive and react appropriately to their child's reaction and overall experiences (Cohen et al. 2006).

A sample consisting of 183 children ranging from ages 8 to 14 participated in the research; 92 participants completed twelve sessions of the TF-CBT and were compared to a group of 91 participants who attended twelve sessions of Child Centered Therapy (CCT), which consisted of non-directive Rogerian techniques. These include active listening, reflection, encouragement to discuss feelings, and an empowerment of the client to direct his or her own therapy and develop coping strategies. Unlike the TF-CBT group, those in the CCT group were encouraged to come up with their own personal coping strategies; in TF-CBT, direct behavioral and educational strategies were used in a more didactic and directive manner. Parents were involved in this treatment group as well, attending some therapeutic sessions (Deblinger et al.

2006). The TF-CBT proved to be a more effective treatment than the comparison group who received CCT; the difference in symptom abatement was statistically significant with a medium to large effect size in favor of the TF-CBT. The symptoms which were ameliorated include Post Traumatic Stress Disorder (PTSD), depression, anxiety, shame, behavior symptoms, and negative abuse-related cognitions. As was evident in prior research, the findings suggesting that TF-CBT is an effective treatment for symptoms in children who have been sexually abused (Cohen et al. 2006, Deblinger et al. 2006).

Another similar treatment is called Cognitive-Behavioral Intervention for Trauma in Schools (CBITS). The treatment was originally designed to address symptoms of PTSD, depression and anxiety related to community violence exposure. However, it has since been used with a wider range of traumatic events. It is intended for use within the school, and is administered in a group setting including 5-8 students. There are ten treatment sessions which involve cognitive-behavioral activities including: education about common reactions to stress and relaxation training, introduction about linking thoughts and feelings, combating negative thoughts, cognitive coping strategies, exposure through creative means such as drawing or writing, and opportunities to practice newly-acquired skills. These skills are taught through a didactic teaching style, age-appropriate examples, and activities to solidify learning (Cohen et al. 2006).

Stein, Jaycox, Kataoka, Wong and Elliott (2003) conducted a research study assessing the effectiveness of the CBITS intervention with a sample of 126 sixth-grade students randomized into either a wait-list or intervention group. They found that, when compared to a three-month wait-list control group, the students participating in the intervention reported fewer PTSD

symptoms with a large effect size; depression scores in the intervention group also decreased with a medium effect size. Parents completed assessments about students' psychosocial functioning, and the intervention group showed a significant improvement. This further supports the idea that CBT is helpful in decreasing negative effects of maltreatment; it also shows that interventions can be helpful in a group setting (Silverman et al. 2008; Stein et al. 2003).

Another treatment based in CBT called Self-Control Therapy was evaluated by David-Ferdon and Kaslow (2008). This treatment is similar to CBITS in that it is administered in a group format within a school setting; its intention was to decrease depressive symptoms. Students participated in twelve sessions involving teaching self-management skills. More specifically, it focuses on teaching self-control and social skills, assertiveness training, relaxation techniques, and cognitive restructuring. The data concluded that, when compared to a "treatment as usual" group consisting of traditional counseling and a waitlist group, those participating in the Self-Control Therapy group benefitted more by showing a greater decrease in depressive symptoms and a greater increase in self-esteem as evaluated through self-report questionnaires.

Some common themes in CBT treatments geared toward children with internalizing symptoms, particularly those who have been exposed to trauma, include psychoeducation, linking thoughts and feelings, challenging maladaptive cognitions, role playing, and relaxation skills. These key features are utilized to help a client become aware of his or her own feelings and cognitions, and develop strategies to cope with challenges.

One evidence-based program that integrates some major concepts that are common in CBT and contains components that strengthen both the personal and social resources and cited

by Luthar, Cicchetti and Becker (2001) is the Promoting Alternative Thinking Strategies (PATHS) program. Originally designed by Mark Greenberg as a program promoting emotion recognition, regulation and understanding for people who are deaf, it has now been adapted for use with regular education as well as special education students. PATHS is based on the ABCD (Affective-Behavioral-Cognitive-Dynamic) model of development and aims to provide children with the skills set and knowledge to effectively practice self-control, empathy, express emotions in an appropriate and healthy way, and problem-solve. Five conceptual domains are specifically targeted including self-control, emotional understanding, positive self-esteem, relationships, and interpersonal problem-solving skills. Those skills are taught didactically, in a group setting, and practiced and generalized in a natural, usually classroom, type setting (Greenberg, Domitrovich & Bumbarger 2000).

Some specific similarities between PATHS and CBT are in psychoeducation, relaxation training, linking thoughts to feelings, and role playing. Although PATHS does not specifically target trauma symptoms or challenge dysfunctional beliefs related to trauma, it does provide a framework for understanding the way that thoughts relate to the way we feel and, subsequently, behave. Problem-solving techniques are also taught didactically and practiced within a group setting. Similar to CBT, PATHS offers strategies to regulate one's emotions and recognize what stress feels like in a physiological way. It teaches ways to calm down and make appropriate choices (Greenberg et al. 2000). It is likely that, given its similarities to CBT, the PATHS curriculum can lead to some similar results.

PATHS is designed with the intention of being a universal, preventative program aimed at developing social skills and emotion regulation in students at a school-wide level. However,

PATHS shares similarities to CBT interventions mentioned above, which may suggest that it could be used with maltreated children to help ameliorate negative symptoms. It could therefore be used as an intervention for maltreated children as well rather than be restricted for use as a preventative measure.

A number of studies have researched the effectiveness of the PATHS program across a number of demographics. Kelly et al. (2004) conducted a qualitative study aimed at exploring the usefulness of PATHS in developing “emotional intelligence.” The term emotional intelligence can be defined as a type of intelligence that is social in nature and involves the ability to monitor one’s own emotions and recognize emotions in others; it describes the ability to discriminate between emotions and use that information to affect one’s own thinking and actions. An awareness of emotions in oneself and others is crucial in being able to problem-solve effectively and develop social competence.

The study examined the implementation of the program, and found a number of positive outcomes. Teachers and support staff praised the program and found it educational, innovative and manageable for students. Students described PATHS as being enjoyable and could explain appropriate strategies for handling difficult emotions. Children performed better on the Kusche Affective Interview (KAI), which assesses students’ understanding of emotions in relation to a range of various affective states and circumstances. Teachers also rated the students higher on their social and emotional competence when given a standardized questionnaire called the Taxonomy of Problematic Social Situations. Kelly et al. (2004) concluded that PATHS had a positive effect on both staff and students. Its effectiveness was studied in more quantitative studies as well.

Originally designed to increase effective problem-solving skills in a deaf and hard of hearing population, PATHS' effectiveness was first reflected in its use in that capacity. A study conducted by Greenberg & Kusche (1998) included 57 hearing-impaired children ages 5-12 from 11 self-contained classrooms for deaf children. Classrooms were randomly assigned to either an intervention group who was participating in the PATHS curriculum, or a wait-list group who would participate in the program during the following year. The results found that those who went through the PATHS curriculum showed improvement in several aspects of social understanding, which includes the recognition of problematic situations, the ability to generate alternative solutions to problems, and the anticipation of consequences. Of particular importance is that the intervention students were more likely to provide prosocial solutions to situations that arose in comparison to the wait-list group. Qualitatively, teachers reported being surprised at the number of affective and problem-solving concepts the students could grasp. This study suggests that PATHS can be successful in increasing prosocial behavior and problem-solving skills in a deaf and hard of hearing population (Greenberg & Kusche 1998). Controlled studies were also conducted examining the effectiveness of the program among other populations.

Greenberg et al. (1995) conducted a research study on the effectiveness of the PATHS curriculum, which involved a sample of 286 second and third-grade hearing students. Of those students, thirty percent were placed in a self-contained, special education classroom setting. 130 children from two schools received the PATHS curriculum, and the remaining 156 were in the control group. After participating in the PATHS program for one year, students made significant gains in their emotional vocabulary. General education students made the most significant gains, and learned to understand complex emotions. Those in special education benefitted as well,

however, with an increase in their ability to understand cues and recognize emotions in others (Bardon, Dona & Symons 2008).

An additional research study examining the effectiveness of PATHS on students attending five different schools in the United Kingdom (UK) was conducted (Curtis & Norgate 2007). They compared a sample of 284 children, 114 in the intervention group and 173 controls, using the Strengths and Difficulties Questionnaire (SDQ) and semi-structured interviews with teachers. The data suggests that compared with the children in the control school, those students who participated in the PATHS program showed significant improvement across all five behavioral and emotional constructs measured by the SDQ: emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems, and prosocial behavior. Interviews with teachers revealed that they perceived PATHS to have a positive impact on students' empathy, self-control, and cooperativeness. They also felt that PATHS had a positive impact on the emotional vocabulary and understanding of the children. This study provides further evidence of the positive impact PATHS can have on students. Additional studies have shown sustained effects of the curriculum on students in special education.

Kam et al. (2004) conducted a study tracking the long-term effectiveness of the PATHS curriculum on the adjustment of children who attend special education classes; students were primarily educated in a self-contained classroom, but had varying levels of mainstreaming. Results indicated that, first, the PATHS curriculum is effective when implemented in a special education environment. Teachers reported fewer externalizing and internalizing symptoms in students, and students participating in PATHS reported significantly fewer depressive symptoms when administered the Children's Depression Inventory (CDI). Students in the intervention

group were also found to have a greater fluency with understanding emotions and identifying them in others as indicated by the KAI. In addition to pre-post measures, additional assessments were given 2 years after the intervention. The findings were significant, and showed that those in the intervention group showed a continual decrease in both externalizing and internalizing symptoms while the control group showed a continual increase. This study, then, suggests that the PATHS curriculum is not only effective in a special education population, but that its effects can be sustained over a 2-year period.

The positive effects of the PATHS curriculum have also been studied in at-risk, minority students. A study by Bardon, Dona, and Symons (2008) examined PATHS' effects on three third-grade, general education, African-American children who were referred by their teachers because of their behavioral difficulties and risk for special education referral as a result. Two of the participants were girls, and one was a boy. Their entire classes received the PATHS curriculum, and progress was monitored and evaluated using behavioral observations of their cooperative play using the operational definition from the Tough Kid Observation Form. Of the 20 observations conducted, the first five and last five were used as baseline and intervention measures, respectively. Reliability checks were completed using videotaped observations. Results show an association between increased cooperative play and the PATHS intervention. The authors of the study propose that the PATHS curriculum could be used as a Response to Intervention approach to prevent the disproportionately high number of minority students requiring special education services largely due to behavioral difficulties.

Results of a number of studies indicate that the PATHS curriculum is effective in decreasing both internalizing and externalizing symptoms across several populations and over a

sustained period of time. A greater ability to recognize and name emotions in both oneself and others was apparent in those who participated in PATHS. In addition, more prosocial skills and problem-solving strategies were found among intervention groups using the PATHS curriculum. These skills are similar to those learned and utilized in CBT when attempting to treat various internalizing disorders among both non-maltreated and maltreated children. These skills could show mediating effects on internalizing symptomology when used with children who are at-risk. While studies have indicated that PATHS can be effective among at-risk, minority students, it is unclear whether PATHS would be effective among a maltreated population because no studies have examined this specific population. Furthermore, no studies have examined the effects of the PATHS curriculum on symptoms directly associated with maltreatment such as anxiety, depression, and low self-esteem.

PATHS could serve as a valuable and cost-effective tool in treating internalizing symptoms among maltreated children. Many children who have experienced maltreatment go without any treatment, and PATHS could be an effective way to provide some important skills to them. It is implemented in a group setting, and can be run by a professional who has training in the PATHS curriculum. This is advantageous because many mental health providers are costly and unavailable, especially among low-income, needy populations. PATHS can also take place in a school setting, where children are more likely to show up for treatment. Invaluable skills, which are especially crucial among maltreated children, are taught in an accessible and effective manner through the PATHS curriculum.

The purpose of the current study was to examine the effects of the PATHS curriculum on a sample of children who are at-risk for internalizing symptoms due to their maltreatment status.

Two groups of low income, largely minority students were compared: a non-maltreated group versus a maltreated group of children. The effects of the PATHS curriculum were measured using pre and post measures assessing internalizing symptoms which include the Children's Depression Inventory (CDI; Kovacs 1992), the Self-Perception Profile for Children (SPPC; Harter 1985), and the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond 1985). It is hypothesized that participants from both the maltreated and non-maltreated groups' scores on these three measures will indicate a decreased amount of depression, anxiety, and low self-esteem after participating in the PATHS curriculum. This aims to address two separate research questions: Is the PATHS curriculum effective in decreasing depression, anxiety and lowered self-esteem when used with largely minority, low-income children? Is the PATHS curriculum effective in decreasing depression, anxiety and lowered self-esteem when used with maltreated children?

CHAPTER THREE

Method

Participants

Archival data from participants at a center devoted to psychological research affiliated with a university in central New York was used; those who participated attended the PATHS program for six weeks at the center. Participants consisted of 68 children ranging from ages 7 to 11. All the children included in the data analysis had either experienced some form of maltreatment (81.2%), as confirmed by a founded case determined by the Department of Human Services (DHS), or were from a low-income background, which was determined based on the family's receipt of public assistance (17.4%). Those in the latter group were considered "non-maltreated" and had no documented record of involvement with Child Protective Services (CPS) in any capacity (neither founded nor unfounded cases). This was a sample of convenience with some participants obtained by DHS referrals. Additional participants were recruited by distributing fliers to local urban schools. In addition, school officials referred students they felt would benefit from the program and parents requested that their child participate. Several participants' parents or family members were enrolled in prior studies at the Mount Hope Family Center (MHFC) and called in to inquire about future studies; they were signed up to participate in PATHS as a result. Those participants who were enrolled through the DHS all had a maltreated status, and those who were recruited through local schools or prior participation in studies at the MHFC represented a combination of maltreated and non-maltreated participants.

The sample consisted of 32 females (47.1%) and 36 males (52.9%). Participants' age ranged from 7 to 11 years of age with a mean of 9.3 years. With respect to race, 64.7% of

participants identified themselves as being African American, 23.5% were Caucasian, 7.4% were a mix of African American and Caucasian, and for 4.4% of participants this information was missing. The majority of participants (81.2%) had a maltreated status whereas 17.4% had a non-maltreated status. The majority of participants in the study also received public assistance: for 45.6% of those in the sample, public assistance was their sole form of income, and 25% of participants supplemented their income earned from employment with some form of public assistance. For more specific demographic data see Appendix A.

Instruments

Mount Hope Family Center Demographics Interview

The Mount Hope Family Center Demographics Interview was developed by various researchers at the University of Rochester's Mount Hope Family Center (see Appendix B). The interviewer gathered information regarding participants' race, living situation, parents' educational level and work and marital status, as well as family income level. Research Assistants asked the caregivers of the participants questions orally and recorded their responses on the questionnaire. The measure was administered by a research assistant trained in standardization and sensitivity in asking questions regarding personal aspects of the participants' lives.

Childhood Depression Inventory (CDI; Kovacs, 1992).

The CDI is a self-report instrument which assesses depressive symptomology in children and adolescents ranging from ages 7 to 17 years. The measure consists of 27 items, and yields an overall measure of depression as well as other, more specific, domains including: Negative

Mood, Interpersonal Difficulties, Negative Self-Esteem, Ineffectiveness, and Anhedonia. The measure requires the respondent to choose one of three statements that best describe him or her during the past two weeks. Items are scored with a “0,” “1,” or “2” based on the severity of the symptom.

Raw scores can range from 0-54 with higher scores indicating a higher degree of depression. Linear T-scores were developed, and have a mean of 50 and a standard deviation of 10. Kovacs (1992) suggests that, based on normative data, scores ranging from 61-70 are considered “Above Average”-“Much above average” and that scores exceeding 70 are considered “Very much above average.” The CDI’s psychometric properties are acceptable: test-retest reliability $r = 0.54-0.87$ and coefficient alpha = $0.71-0.86$. Raw scores and T-scores from the overall measure of depression were used in the analyses. The CDI’s psychometric normative analyses were conducted on a sample which included ethnic minorities as well as a wide range of socioeconomic backgrounds; this suggests that the measure’s norms are appropriate to use with the low-income, largely minority population who are evaluated in the current study.

Self-perception Profile for Children (SPPC; Harter, 1985). The SPPC is a self-report instrument consisting of 36 items assessing children’s sense of competence across several domains including: scholastic, athletic, physical, social, behavioral competencies, and global self-worth. Each item includes two statements describing “some kids,” and the participant is asked to first choose which one best describes him or her. For example, one item states: “Some kids find it’s hard to make friends BUT Other kids find it’s pretty easy to make friends.” After choosing a statement, the participant is then asked to choose whether he or she is “sort of like” or “really

like” that statement. The technical properties are acceptable for this measure: test-retest reliability $r = 0.70-0.87$ and coefficient alpha = $0.71-0.86$.

Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond 2002).

The RCMAS is a self-report inventory of anxiety designed to assess the level and nature of anxiety in children ages 6 to 19 years. It consists of 37 items, to which children respond ‘yes’ or ‘no.’ Questions are divided into three sub-scales: Physical Anxiety, Worry/Over-Sensitivity and Social Concerns/Concentration. There are nine additional items making up a Lie scale, which is viewed as a measure of social desirability. High scores on this scale are seen as an attempt to present oneself in a positive light. Each of the 28 anxiety-related items is given a score of 1 for a response of ‘yes’ and 0 for a response of ‘no,’ which results in a Total Anxiety score.

T-scores ($n=50$) are used to calculate the Total Anxiety score, and those that are greater than 70 are considered significantly elevated. Individual sub-scale scores used scaled scores with $x=10$, $SD=3$, therefore deeming a scaled score of 13 or higher clinically significantly elevated. The RCMAS has adequate technical properties: test-retest reliability $r = 0.68$ and coefficient alpha = 0.82 . Normative samples included in determining the psychometric properties of the RCMAS were representative of ethnic minorities and a low socioeconomic status. One exception is noted among African American females, where the reliability coefficients are significantly lower at ages 6, 8, 10, and 11 than for white females at the same ages. Therefore, special care should be used when interpreting Total Anxiety scores for African American females below age 12.

PATHS Intervention

Dr. Jody Todd Manly collaborated with Dr. Mark Greenberg, who is the creator of the PATHS curriculum, to select the most appropriate and relevant lessons for the Rochester-based program. Twenty-one lessons were chosen and modified to appropriately fit the participants' age and interests. The content and objectives remained unchanged; this type of flexibility is common and recommended when using the PATHS curriculum.

The first lesson begins by introducing PATHS to the participants and developing readiness skills in role-playing and paying attention to others. These skills are prerequisites to a successful program, and provide a basic skills-set for subsequent lessons. Skills are reiterated and practiced until they are mastered during the six-week PATHS curriculum.

The curriculum provides an "introduction to feelings," which uses direct instruction to teach children about what feelings are and how to recognize them in oneself and others. This provides a basic understanding for the rest of the curriculum, much of which is spent learning how to name and identify different kinds of emotions such as angry, afraid, safe, frustrated, disappointed, and guilty. Participants are taught that all feelings are okay, but that not all behavior is okay. The last lesson focuses on "Manners," and teaches the distinction between feelings and manners; it provides a time for children to practice naming which behaviors are "polite" and, therefore, okay, and which are not.

The other major skill taught in the PATHS curriculum is self-control. It is taught by either using "the turtle" story or the "control signals" analogy. The objective is to teach three steps in calming down. The steps involved in the turtle story are: stop and calm down, take a deep

breath, say the problem and how you feel, then rest until your feelings are not so strong or until you feel calmer. The control signal's steps include: Stop and calm down, slow down and think, go ahead and try the plan, and then evaluate how it went. The next lesson is devoted to practicing using the appropriate use of these calming techniques.

Procedures

Permission was granted for the collection of the data to Dr. Jody Todd Manly after she submitted a proposal to the Research Subjects Protection Board (RSRB), and funding and resources were provided by the United Way and Foodlink. Dr. Jody Todd Manly serves as both the Principal Investigator for the research conducted during the PATHS program as well as its clinical director. The PATHS program, as well as the research associated with it, takes place at the Mount Hope Family Center, which is a part of the University of Rochester.

Children were recruited through referrals by the Department of Human Services (DHS) as well as through responses to fliers distributed throughout local urban schools. Several participants' parents who had participated in past research studies called the program coordinator, and were enrolled. Those children referred through the DHS were all classified as having a maltreated status, and were referred as a result of a case worker's determination that the child would benefit from participating in the PATHS curriculum. Participants recruited in schools and past participants consisted of a combination of children who have been maltreated, and those who have not. The sample of participants was comprised of a convenience sample.

Participants were separated into a maltreated group and a comparison group as determined by their DHS status. To be considered maltreated, participants must have had charges

pressed and founded, on their behalf by Child Protective Services (CPS) at some point during their life. Those in the comparison group must not have a history of any child abuse or neglect according to the DHS. Children attending PATHS who had a case which was not founded were still invited to participate in the program, but their data was excluded in the analysis for this study.

Children were enrolled in the program upon the agreement from the child's parent or legal guardian. To do this, the project coordinator made an appointment to obtain RSRB-approved consent and demographic information from the parent. All children signed an RSRB-approved assent form prior to participating in any of the research. Participants and their parents or legal guardians were informed that they were free to withdraw or abstain from the research at any time without being penalized in any way, and would be able to continue to attend the PATHS program despite their research participation.

Confidentiality was maintained in several ways. First, it was explained to participants that their answers are private and will not be shared with anyone outside of the project. Participants were identified by number only, not by name, on their paper measures. These measures were kept in a locked filing cabinet; at that point they contained no other identifying information other than the number that participants were assigned. After data was collected and entered electronically, results were accessible to only those analyzing the data who had no access to any other identifying information about the participants.

Children who participated attended the PATHS program after school for six consecutive weeks. They went to the program on Tuesday, Wednesday, and Thursdays from approximately

3:00PM until 6:00PM and were provided with transportation, an after-school snack, and dinner. Grant money was provided by United Way as well as private donors to the Mt. Hope Family Center, and meals were provided at a reduced cost by Foodlink. Three sessions, each containing different samples of children, took place during each respective year; sessions were either in the fall, winter or spring.

Participants were divided into separate groups according to age; three groups attended the program, but this study analyzed data collected on the groups consisting of eight and nine-year-olds and ten and eleven-year-olds. This was because the younger children's assessments differed due to comprehension and literacy issues. Each respective group had two consistent counselors who led the PATHS lesson as well as other activities in the groups. During the three-hour period that the participants attended the program, they had a 30 minute PATHS lesson, time to do homework from school, music, art, and gym. All people working in the program were trained in the PATHS curriculum, and incorporated the lessons into all of the activities. A certified School Counselor or a certified Mental Health Counselor were on-site each day to supervise and ensure that the curriculum was being followed with integrity.

All three measures were administered individually by a Research Assistant, in one sitting, and at both the first and sixth week, respectively. Research Assistants were given independent training by the program coordinator in administering the paper measures in a standardized and objective manner. In order to ensure that participants were able to comprehend the questions on the measures, Research Assistants read the items aloud while participants looked on. Research Assistants, then, marked the answer that was chosen. Having the questions presented both

visually and auditorily was intended to reduce the likelihood that poor readers would misunderstand the questions.

CHAPTER FOUR

Results

To answer the research question regarding whether low-income and maltreated children experienced lower internalizing symptoms after completing the PATHS curriculum, a repeated measures test was conducted with the RCMAS Total and CDI Total scores as well as the Negative Self Image score. The PATHS curriculum served as the independent variable. The dependent variables were anxiety symptoms, depressive symptoms, and negative self-image as measured by the RCMAS Total Score, CDI Total Score, and the Negative Self-Image scale's score on the CDI, respectively.

Anxiety

The first repeated measures test was conducted in order to determine whether participants' anxiety symptoms were lower after participating in the six-week PATHS curriculum, and was measured using the RCMAS Total score. Completion of the PATHS curriculum was the independent variable, and the RCMAS Total score was the dependent variable. When looking at overall anxiety, the test revealed that participants reported significantly lower anxiety symptoms after completing the curriculum as compared to their initial self-reports, $F(1,60)=7.083, p \leq .01$. It is important to note that the sample's mean scores fell within normal limits, indicating that the sample tended to not experience significantly elevated symptoms of anxiety either before or after

participating in the PATHS curriculum (see Table 2). As stated above, T-scores at or above 70 are considered clinically significant for anxiety symptoms on the RCMAS.

When analyzing whether gender had any difference on overall self-perceived anxiety symptoms, a test of within-subjects contrasts for males ($n=32$) and females ($n=29$) was conducted. Results indicated that there is a significant difference between male and females' level of anxiety both pre and post, $F(1, 59)=6.890, p \leq .01$. Females reported a significantly higher mean level of anxiety both before and after participating in the PATHS curriculum as compared with their male counterparts (see Table 4). However, there is no significant interaction, $F(1, 59)=.064, p=.802$. This indicates that both males and females reported a similar level of response to the treatment in the same direction (both reported lower levels of anxiety after completing the PATHS curriculum).

In order to determine whether participants' parents level of education had an impact on their anxiety symptoms, tests of within-subjects contrasts were completed with two groups: those whose parents completed less than 11 years of education ($n=18$), and those whose parents completed more than 11 years of education ($n=32$). Results indicated that those participants whose parents reported having completed 11 or more years of education tended to benefit significantly more from the PATHS curriculum than participants whose parents completed less than 11 years of education, $F(1,52)=4.019, p \leq .05$. Initially, the two groups did not show significant differences in anxiety symptoms. However, when examining their scores after participating in the PATHS curriculum, those whose parents were more educated showed lowered anxiety symptoms as compared to those with parents who had less education and actually reported a slight increase in self-reported anxiety symptoms (see Table 3). Therefore, the

overall significantly lowered anxiety symptoms among the whole group can be generalized only to the group of participants whose parents had more than 11 years of education; those whose parents had fewer than 11 years did not significantly benefit from the PATHS curriculum.

Depression

In order to determine whether the PATHS curriculum is effective in decreasing symptoms of depression among participants, a repeated measures test was conducted. Completion of the PATHS curriculum was the independent variable, and CDI Total score was the dependent variable. When looking at overall self-reported depression symptoms, the test revealed that participants reported significantly higher depressive symptoms after completing the curriculum as compared to their initial self-reports, $F(1,54)=4.246, p \leq .05$. As described above, a T-score on the CDI falling above 70 is considered “Very much above average.” It is important to note that group means are above 70 both pre and post, indicating that their self-reported depressive symptoms started off and remained significantly elevated throughout the course of the PATHS curriculum.

When analyzing if gender had any difference on overall depressive symptoms, a within-subjects contrasts was conducted. Results revealed significant differences in overall self-reported depressive symptoms across gender, $F(1, 53)=4.185, p \leq .05$. Girls’ pre and post CDI total scores were significantly higher than that of their male counterparts’ scores (see table). However, no interaction was detected, $F(1, 53)=.018, p=.895$. This indicates that while girls’ self-reported symptoms were significantly higher than males’, both groups experienced a similar increase in self-reported depressive symptoms after participating in the PATHS curriculum.

In order to determine whether participants' parents level of education had an impact on their depressive symptoms, tests of within-subjects contrasts were completed with those whose parents completed less than 11 years of education and those whose parents completed more than 11 years of education. Results indicated that there was no significant difference in depressive symptoms or response to the PATHS curriculum across parents' education level, $F(1,46)=3.109$, $p=.084$.

Self-Esteem

A large number of missing data points occurred with the *Self-perception Profile for Children* (SPPC), and the reason for this was explored. It was tentatively concluded that the measure was refused by many participants due to its length. This brought into question its validity as a measure, due to some children's inability to attend during its administration and inability to understand the directions. Due to both the incompleteness of the data along with the questionable validity of the measure, it was decided that the measure should not be analyzed for the purposes of this study. The Negative Self Image scale from the CDI was used in its place to explore participants' self-esteem.

The third repeated measures test was conducted with the Negative Self-Esteem scale, which is included in the CDI. This was intended to measure whether completing the PATHS curriculum would help to increase participants' level of self-esteem. Completion of the PATHS curriculum was the independent variable, and the T-score on the Negative Self-Esteem scale was the dependent variable. The test revealed that completing the PATHS curriculum did not have a significant effect on participants' self-reported level of self-esteem, $F(1,62)=2.279$, $p=.136$.

Participants' overall scores fell within the "Very much above average" range indicating that the sample reported experiencing a clinically significant level of negative self-esteem both before and after completing the PATHS curriculum.

When analyzing if gender had any difference on overall negative self-esteem, a within-subjects contrasts was conducted. Results revealed no significant differences in negative self-esteem across gender, $F(1,61)=2.241, p=.140$.

The effect of the participants' parents level of education was also examined. A within-subjects contrasts test was conducted to determine whether there is a significant difference between participants' outcomes based on their parents education level. No significant difference was found across parental education level, $F(1, 54)=2.545, p=.717$.

CHAPTER FIVE

Discussion

Two separate research questions were intended to be explored through the current study:

Is the PATHS curriculum effective in decreasing depression, anxiety and lowered self-esteem when used with largely minority, low-income children? Is the PATHS curriculum effective in decreasing depression, anxiety and lowered self-esteem when used with maltreated children?

With regards to the first research question, the results of this study revealed that completing the PATHS curriculum decreased internalizing symptoms only in the area of anxiety. However, it is important to note that participants' overall level of anxiety was not considered to be clinically significant either before or after completing the PATHS curriculum. This is in contrast to participants' levels of depressive symptoms and negative self-esteem, which were within the clinically significant range both before and after completing the PATHS curriculum.

With regard to the second research question addressing the effectiveness of the PATHS curriculum in reducing internalizing symptoms when working with maltreated children, an accurate comparison could not be made due to a lack of complete data for the non-maltreated children. Although this study was intended to measure the effectiveness of the PATHS curriculum on low-income children as well as maltreated children, a number of issues arose that eliminated the possibility for an accurate comparison. The initial sample of participants included equivalent numbers of non-maltreated and maltreated children, but several factors influenced the final sample composition. First, many participants had incomplete data. When just a pre or a post measure was completed, the data could not be used. Second, the data was archival and at the start of the study, many participants who began with a non-maltreated status gained a maltreated

status due to incidents that occurred either during or after the data collection period. Other participants' status as maltreated or non-maltreated became unclear because of reports to Child Protective Services that were unfounded. For the purposes of research, these unfounded cases created doubt about participants' level of maltreatment and their data could therefore not be used. Due to the disproportionately high number of children with a maltreated status as compared with a non-maltreated status in this study, no accurate comparison can be made between maltreated and non-maltreated children's response to the PATHS curriculum. The results can instead be used as more general, preliminary data measuring both low-income and maltreated children's response to the PATHS curriculum.

As stated above, completing the PATHS curriculum significantly decreased self-reported anxiety symptoms. In contrast to research that suggests that individuals who experience maltreatment have clinically significant levels of anxiety (Bolger & Patterson, 2001; Maikovich et al., 2008), participants in this study reported typical levels of anxiety at the beginning of the PATHS intervention, and their anxiety levels tended to decrease to significantly lower levels after completing the curriculum. An explanation for the significant decrease in anxiety symptoms as compared with depression and negative self-esteem which did not show improvement may be due to the fact that the participants' anxiety levels were manageable to begin with. Both depression and negative self-esteem were considered clinically significant at the initial measure, whereas anxiety was not. It may be the case that if one is overwhelmed with negative symptoms in a particular area (depression, negative self-esteem, etc.), a more intensive and customized plan of treatment such as individual counseling is necessary to make improvements for those symptoms. Conversely, if one is not consumed with negative feelings in an area, he or she may

feel more capable of making positive changes. Additionally, when a person is feeling less debilitated by negative symptoms, he or she may have more energy to devote to making positive changes. Therefore, because participants showed manageable levels of anxiety to begin with, in contrast to their self-reported clinically significant levels of depression and negative self-esteem, they may have been able to make greater gains.

In terms of demographic changes that impact participants' anxiety levels pre and post PATHS curriculum, several factors were apparent. First, although both group anxiety scores fall within normal limits, girls' scores were statistically significantly higher on anxiety as compared with boys. Similarly, Armstrong and Khawaja (2002) found that females experience and report anxiety symptoms more often than males in non-clinical populations. Despite the statistically significantly higher report of anxiety among females, both males and females benefitted similarly from the PATHS curriculum. In other words, while the groups may have reported differing levels of anxiety, both showed similar levels of improvement after completing the PATHS curriculum.

The second demographic factor that showed a significant effect on participants' change in anxiety level in response to the PATHS curriculum was participants' parent's education level. Those participants whose parents completed more than 11 years of education tended to benefit significantly more than those whose parents completed less than 11 years of education. When this demographic characteristic was examined in isolation, it became apparent that the results indicating lowered anxiety after completing the PATHS curriculum could not be generalized across the entire population, but only to those who have a parent with 11 years of education or more. This finding could be a result of additional parental support and encouragement of the

PATHS curriculum due to a higher value of educational programs among those who had a higher educational level. Additionally, those whose parents obtained a higher level of education may indirectly benefit from their parents' potentially greater ability to problem-solve or "stick with" various projects presented to them. Children of higher educated parents may also benefit from a higher level of language skills and emotional regulation skills in their home environment; this could positively impact children with parents who have higher educational attainment in that they possess prerequisite skills that their counterparts may not have exposure to. For example, Davis-Kean (2005) found that parents' educational attainment is related to children's academic achievement due to higher parental educational expectations along with more specific parenting behaviors.

As indicated above, participants did not show a decreased level of depression after completing the PATHS curriculum. Participants' scores fall within the "Very much above average" range both before and after completing the PATHS curriculum. This is consistent with previous research that finds maltreated children experience higher levels of depressive symptoms (Brown, Cohen, Johnson & Smailes, 1999; Toth, Cicchetti & Kim, 2002). The fact that children in this sample, consisting largely of maltreated children, demonstrate significantly higher levels of depression than their same-aged peers is not surprising.

Interestingly, participants reported statistically significantly higher levels of depression after completing the curriculum. One explanation for this higher level of self-reported depression could be related to a higher comfort level with the research assistants after completing the curriculum. After getting to know the research assistants for six weeks, participants may have been more likely to be forthcoming when disclosing their negative feelings. Another potential

explanation could be related to participants' higher level of emotional awareness after completing the PATHS curriculum. Given that the curriculum directly teaches about emotion recognition, it is possible that participants were better able to identify and were more practiced in expressing their true feelings after completing the PATHS curriculum. A qualitative study by Kelly et al. (2004) found that those who participated in the PATHS curriculum were better able to monitor their own emotions and more accurately recognize emotion in others. If either of these hypotheses are correct, the implications could be positive in that children are more able to access their emotions and subsequently more willing and able to address them in a treatment setting.

An alternate explanation for the lack of symptom reduction in the area of depressive symptoms could be related to the level of severity of the symptoms reported by participants. Given the significantly high level of depression reported by participants, it is possible that depression resulted in a lack of mental energy and an inability to problem-solve due to a high number of cognitive distortions. A more intense course of treatment, then, may be required for children with such a high level of depressive symptoms to access or benefit from a social skill-building curriculum.

A number of demographic factors were examined to determine whether or not certain factors have an effect on depressive symptoms in participants both before and after completing the PATHS curriculum; parental education level did not have an impact on participants' depressive symptoms before or after the PATHS curriculum, but gender differences were noted. Girls' self-report of depressive symptoms was significantly higher than boys'. This is consistent with prior research demonstrating higher self-report of depression among girls. Hankin, Mermelstein and Roesch (2007) who examined the etiology and number of depressive symptoms

across sexes, found that adolescent girls experience a higher number of interpersonal stressors in both their families and with peers. This is hypothesized to be the mediating factors for a higher number of depressive symptoms. Their findings also indicated that girls tended to react more strongly and experience greater depressive symptoms as a result of stressful events. It could be that girls participating in this study demonstrated a similar pattern which accounts for the higher level of self-reported depressive symptoms. There was no interaction, however, indicating that both genders showed a similar increase in self-reported depressive symptoms after completing the PATHS curriculum.

Low Self-Esteem was also examined using a scale in the CDI called Negative Self-Esteem. Initially, the SPPC was intended to be the primary measure of participants' level of self-esteem, but was not used due to a high number of missing data points along with question about participants' ability to sustain attention and understand the items being presented to them. The Negative Self-Esteem scale was therefore used and participants' scores fall within the "Very much above average" range both before and after completing the PATHS curriculum. This is consistent with recent research indicating that those who have experienced maltreatment also experience a higher prevalence of Negative Self-Esteem (Kim & Cicchetti, 2009).

Unlike the overall measure of depression using the CDI, Negative Self-Image did not change in a statistically significant manner after completing the PATHS curriculum. Due to the very significant self-reports of low self-esteem, it is possible that participants' high level of Negative Self-Image was so debilitating that it prevented them from being able to access the curriculum in a meaningful way. It could be argued that their internalizing symptoms require a

much higher level of treatment and could not be remedied or improved without a more intense course of treatment.

Parent level of education and gender were examined in relation to the Negative Self-Esteem scale, and no significant differences were determined. This indicates that participants tend to experience significantly lower self-esteem than their same-aged peers despite their gender or their parents' education level.

There are limitations to the study's design. Due to the fact that there is no control or accurate comparison group, analyses are preliminary and warrant further research. By including a control group who does not receive the PATHS curriculum, the improvements made over the course of the six weeks can more accurately be attributed to PATHS rather than other variables such as time. Having a comparison group with comparable numbers of maltreated versus non-maltreated participants would help to determine whether or not maltreatment has an effect on one's ability to access and benefit from the PATHS curriculum.

Another limitation is that it is not known whether participants are, or have, received interventions that may affect their scores on the CDI or RCMAS. Although most maltreated children's symptoms go untreated, it would seem more likely that, when in a sample with other low-income students, maltreated children would qualify for psychological interventions more often than those who are not maltreated; this could be because their case has been brought to the attention of officials whose job is to monitor them after the traumatic event or abuse occurred.

Additionally, the PATHS curriculum was administered in a non-traditional manner and outside of the school setting. Typically, it would be integrated into students' school day and

generalized in the school setting. Participants in this study attended the program after school at a separate center. Attempts were made to generalize the skills during various activities at the after-school program, but it was not done in school setting as it was intended to be.

This study examined participants' level of benefit from the PATHS curriculum solely by using self-report measures, which presents a number of concerns about the results' validity. One concern is that it is impossible to be sure of participants' level of honesty and comprehension of the questions presented to them. This is always a concern with self-report measures, but a particularly big concern among the current population. Due to low academic achievement among the population, questions were read aloud and presented visually to help ensure comprehension. Research assistants circled responses that were selected by participants. While this is likely to have improved the level of comprehension, it may have created bias among participants' responses.

The present study is also limited by the timing of the assessments; in order to get a true assessment of the children's change (or lack thereof) in functioning, they were administered at the furthest possible time points (week one and week six). However, it is possible that the participants' patterns in reporting changed during the course of the six week, which may or may not have to do with the program's effectiveness. For example, a participant may actually report more symptoms at the end of the program due to a higher level of comfort with the setting and the person administering the measure.

This study exhibits a number of unique strengths including the level of training of those who carried out the program. All counselors had, or were working toward either an

undergraduate or graduate degree in psychology or education. This was particularly useful because those implementing the curriculum had prior knowledge about psychological interventions as well as research methods. Having all of those involved in the after-school program aware of the objective and specific lessons of the curriculum also helped with generalizability of the concepts learned throughout the six weeks.

Additionally, those who implemented the PATHS curriculum were trained extensively on the program's implementation, and were able to carefully and thoughtfully develop their implementation plan each day. With increasing academic demands and frequent measures of academic performance in school systems, social skill-building programs can be deemed less important and are sometimes implemented with less care and planning in a school setting. Those implementing PATHS for the purposes of this study were employed for the sole purpose of providing the PATHS curriculum and could therefore devote an adequate amount of energy and thoughtfulness to its implementation.

The current study was also bolstered by the Principal Investigator, Dr. Jody Todd-Manly's, who made direct contact with the creator of the PATHS curriculum. Dr. Todd-Manly was able to consult with Dr. Mark Greenberg about the most effective implementation of the program, and hand-picked lessons to best fit our research and clinical purposes.

Directions for Future Research/Contributions

Given that this was an exploratory and preliminary study without a comparison or control group, future research should focus on comparing a maltreated group to a low-income population receiving the PATHS curriculum and a comparable low-income population not receiving the

PATHS curriculum. This could help to determine whether it is the poverty component or the maltreatment component that was responsible for the high levels of Negative Self-Esteem and Depressive symptoms among the sample. Having a similar control group could also help to determine if any changes can be causally attributed to the PATHS curriculum, and not extraneous factors in the participants' lives.

In light of the finding that participants whose parents had a higher educational level showed an even lower level of anxiety after completing the PATHS curriculum, more research examining other benefits of parental education could be explored. Parental education level could serve as an important protective factor, which could prove to be useful in promoting social-emotional well-being in students.

While a more controlled study with a larger sample-size should be conducted before making any conclusions, preliminary results indicate that the internalizing symptoms of low-income, maltreated participants are not reduced with a six week after-school PATHS curriculum. This appears to be a result of the severe nature of their symptomology, but further examination should be conducted to determine whether participants who are from a low-income and largely maltreated population benefit from a program that occurs in a group, less-intense setting than individual counseling.

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Table 1

Demographic Information

Demographic Variable <i>n</i> (%)	Whole Group <i>n</i> =69 (100%) Mean Age: 9.3	Non-Maltreated <i>n</i> =12 (17.4%) Mean Age: 9.2	Maltreated <i>n</i> =56 (81.2%) Mean Age: 9.3
Sex			
Male	52.9	41.7	55.4
Female	47.1	58.3	44.6
Race			
African American	64.7	91.7	59.8
Caucasian	23.5	0	28.6
Mixed Race (African American & Caucasian)	7.4	8.3	7.1
Data not available	4.4	0	5.4
No Latino/Latina Heritage	76.8	100	73.2
Latino/Latina Heritage	21.7	0	26.8
Relationship of Guardian to Participant			
Biological Mother	75	91.7	71.4
Biological Father	2.9	0	3.6
Grandparent	8.8	8.3	8.9
Other Relative	5.9	0	7.1
Foster Parent	7.4	0	8.9
Marital Status of Parent/Guardian			
Never Married	39.7	41.7	39.3
Married	13.2	8.3	14.3
Widowed	4.4	25	0
Divorced	7.4	8.3	7.1
Separated, not legally	14.7	16.7	14.3
Living with Partner	8.8	0	10.7
Employment Status of Guardian			
Employed Full-Time	27.9	41.7	25
Employed Part-Time	13.2	25	10.7

Looking for Work	10.3	0	12.5
Unemployed, but not looking for work	4.4	0	5.4
In School	7.4	25	3.6
Keeps house, cares for children	1.5	0	1.8
Disabled	23.5	8.3	26.8
Not working, reason not specified	2.9	0	3.6
Data not Available	8.8	0	10.7
Income range of family			
Less than \$15,000 annually	33.8	16.7	37.5
\$15,000-\$24,999 annually	30.9	50	26.8
\$25,000-\$34,999 annually	13.2	25	10.7
\$35,000-\$44,999 annually	1.5	0	1.8
\$45,000-\$74,999 annually	2.9	0	3.6
Data not available	17.6	8.3	19.6
Receipt of Public Assistance			
Currently receiving full assistance, with no earned income	45.6	16.7	51.8
Used to receive assistance, but does not currently	8.8	16.7	7.1
Never received public assistance	7.4	8.3	7.1
Currently received partial assistance to supplement earned income	25	58.3	17.9
Education Level of Parent/Guardian			
8-9 th grade	4.4	0	5.4
10-11 th grade	23.5	33.3	21.4
GED	22.1	25	21.4
Vocational/Technical Diploma	32.4	33.3	32.1
RN Diploma or Bachelor's Degree	4.4	8.3	3.6
Master's Degree, Doctoral Degree, ect. (MD, JD, PhD)	1.5	0	1.8
Data not available	11.8	0	14.3

Table 2

*Repeated Measures pre and post scores using the Children's Depression Inventory (CDI) overall Depression and Negative Self-Esteem scores as well as the Revised Children's Manifest Anxiety Scale (RCMAS). *, $p < .01$*

<i>Dependent Variables</i>	<i>Whole group</i>	
	<u>pre</u>	<u>post</u>
CDI: overall depression score	73.018 (n=55)	74.782* (n=55)
CDI: Negative Self-Esteem	72.607 (n=56)	73.693 (n=56)
RCMAS	46.574 (n=61)	43.737* (n=61)

Table 3

*Repeated Measures design, pre and post scores when examining parental education level (more or less than 11 years of education completed). *, $p < .01$*

<i>Instrument</i>	<i>Parent has less than 11 years of education</i>		<i>Parent has more than 11 years of education</i>	
	<u>pre</u>	<u>post</u>	<u>pre</u>	<u>post</u>
CDI: overall depression score	73.0625 (n=16)	75.000 (n=16)	73.031 (n=32)	74.500 (n=32)
CDI: Negative Self-Esteem	73.176 (n=17)	72.205 (n=17)	74.824 (n=39)	73.231 (n=39)
RCMAS	49.389 (n=18)	50.222 (n=18)	45.611 (n=36)	41.639* (n=36)

*Table 4**Repeated Measures design, pre and post scores when examining gender. *, $p < .01$*

<i>Instrument</i>	<i>Female</i>		<i>Male</i>	
	<i>pre</i>	<i>post</i>	<i>pre</i>	<i>post</i>
CDI: overall depression score	74.538 (n=26)	76.423 (n=26)	71.655 (n=29)	73.310 (n=29)
CDI: Negative Self-Esteem	73.500 (n=28)	71.714 (n=28)	51.286 (n=35)	48.000 (n=35)
RCMAS	47.379 (n=29)	44.828 (n=29)	45.844 (n=32)	42.750 (n=32)

*females' self-reported overall anxiety and depression scores were higher than males', but no interaction was noted.